Claims

[c1] What is claimed is:

1.A method for using an optical disc drive to manage data on an optical disc, the optical disc comprising a defect table and a plurality of data blocks for recording data, each of the data blocks having a corresponding unique address, the defect table comprising at least one entry, each of the entries being used to record the address of a corresponding defective data block on the optical disc, and the optical disc drive comprising a memory, the memory comprising a plurality of memory areas, each of the memory areas being used to store one of the entries, wherein when the optical disc drive writes data onto the optical disc, the optical disc drive is capable of detecting the defective data blocks of the optical disc, the method comprising:

allocating at least one first memory area in the memory, and storing a corresponding entry of the defect table in each of the first memory areas; and

storing the address of a first data block of the optical disc in an original second memory area of the memory before data is written in the first data block if the first data block is defective and if there is at least one address, which is greater than the address of the first data block, recorded in the defect table, wherein the second memory area is different from the first memory area.

[c2] 2.The method of claim 1 wherein when the address of the first data block is stored in the second memory area, a number of times needed to modify the entries stored in the first memory areas is less than a number of the entries, the entries being included in the defect table and all of the addresses the entries record being greater than the address of the first data block.

[c3] 3.The method of claim 1 further comprising: storing the address of a second data block of the optical disc in another second memory area when the second data block is defective.

[c4] 4.The method of claim 3 further comprising: restoring the address of the first data block in another second memory area and releasing the original second memory area if the address of the second data block is less than the address of the first data block.

[c5] 5.The method of claim 1 further comprising: restoring the address of the first data block from the first memory area to another memory area of the memory before the optical disc drive stops writing data onto the optical disc if the address stored in the second memory area is less than the address stored in the first memory area.

[c6] 6.The method of claim 1 further comprising: updating the defect table according to the addresses stored in the first memory areas and the second memory area, and writing the updated defect table in the optical disc before the optical disc drive stops writing data onto the optical disc.

[c7] 7.The method of claim 1 wherein the data blocks and the defect table are established according to a specification of CD-MRW(Compact Disc - Mount Rainier reWritable).

[c8] 8.The method of claim 1 wherein the optical disc further comprises a plurality of spare data blocks for recording data, which are prepared for the defective data areas, each of the spare data blocks has a corresponding address, and each of the entries of the defect table is also used to record the address of a corresponding spare data block.

[c9] 9.A method for using an optical disc drive to manage data on an optical disc, the optical disc comprising a defect table and a plurality of data blocks for recording data, each of the data blocks having a corresponding unique address, the defect table comprising at least one entry, each of the entries being used to record the address of a corresponding defective data block on the optical disc, and the optical disc drive comprising a memory, the memory comprising a first memory area and a second memory area capable of storing a plurality of the entries, wherein when the optical disc drive writes data onto the optical disc, the optical disc drive is capable of detecting the defective data blocks of the optical disc, the method comprising:

storing the defect table in the first memory area;

storing the address of a first data block in the second memory area before data is written in the first data block if the first data block is defective;

storing the address of a second data block in the second memory area and

sorting the addresses both of the first data block and the second data block if the second data block is defective; and

sorting the addresses both of the first data block and the second data block according to the sorting order of the defect table stored in the first memory area, and updating the defect table according to the sorted address stored in the memory before the optical disc drive stops writing data onto the optical disc.

[c10] 10.The method of claim 9 wherein the data blocks and the defect table are established according to a specification of CD-MRW(Compact Disc - Mount Rainier reWritable).

[c11] 11.A method for using an optical disc drive to manage data on an optical disc, the optical disc comprising a defect table and a plurality of data blocks for recording data, each of the data blocks having a corresponding unique address, the defect table at least recording the address of a corresponding defective data block on the optical disc, and the optical disc drive comprising a memory having a first memory area and a second memory area, wherein when the optical disc drive writes data onto the optical disc, the optical disc drive is capable of detecting the defective data blocks of the optical disc, the method comprising:

storing the defect table in the first memory area;

storing the addresses of the defective data blocks, which are detected by the optical disc drive while the optical disc drive writes data onto the optical disc, in the second memory area, and sorting the addresses stored in the second memory area; and

combining the addresses of the defect table stored in the first memory area with the addresses stored in the second memory area so as to update the defect table, and writing the updated defect table in the optical disc before the optical disc drive stops writing data onto the optical disc.

[c12] 12.The method of claim 11 wherein the data blocks and the defect table are established according to a specification of CD-MRW(Compact Disc - Mount Rainier reWritable).